WM. F. NORRIS,
NO. 1530 LOCUST STREET,
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ORIGINAL ARTICLES.

THIRTEEN CASES OF PHTHEIRIASIS OF THE LIDS SEEN IN ONE YEAR.

BY FRANCIS M. CHISOLM, M.D.,

Surgeon to the Presbyterian Eye, Ear and Throat Charity Hospital of Baltimore Maryland.

For the year 1891 there were recorded in the Books of the Presbyterian Eye, Ear and Throat Charity Hospital thirteen cases of crab lice infesting the eyelashes. The numerous entries of this rare form of disease excited comment, because so seldom found in the Eye Hospital Reports. Is it because we have more of it in Baltimore; or is it that a more careful examination is made of cases of apparent blepharitis which this condition so closely resembles? As the majority of these cases were in Polish Jews of recent importation such cases ought to appear much more frequently in European ospitals

than are reported. Hirschberg, in Berlin, is reported to have seen only three cases of pediculi of the lids out of 40,000 patients, and Galezowski, in Paris, but two cases in his enormous dispensary practice. Not a year has passed since the opening of the Presbyterian Hospital that one or more persons afflicted with this parasite have not applied for treatment.

Crab lice of the eyelashes, as animal parasites of other parts of the body, is an affection almost synonymous with filth and is found for the most part among the lowest class of humanity. Cleanliness and eyelash lice are yet not as wholly incompatible as we might suppose, if we are to judge from the appearance of a few of the patients. Well washed children, brought by parents neat in person, are occasionally seen among those seeking relief. On the other hand, the Negro race in whom pediculosis is well known to be excessively common, are seldom, if ever, troubled by insects locating in the lashes. The vermin found on the eyebrows and lashes are similar to those of pubis, both in size and shape, but according to Dr. Durkee their tint is somewhat lighter. The head or body louse, as we know, differs materially from these in form and color.

Some text-books mention such a disease of the eyes, but consider it an extremely rare condition. In others it is not described at all. From older literature we find that it either passed unrecognized as such, and was called by the general name blepharitis; or it was of exceedingly rare occurrence as evidenced by the scarcity of written records. Celsus, living about 1900 years ago, was the first to describe it; and since then to the present time not more than five or six instances have been reported in the experience of any one observer. Lawrence, in his "Diseases of the Eye" speaks of a child that came to his notice at the London Ophthalmic Infirmary complaining of itching eyes which he found on careful examination to be crab lice. The lashes, he says, looked thickened from the number of vermin clinging to each shaft. "I have seen this vermin on the eyelashes in one other instance only." Neither Demours nor his father had ever seen a case. Scarpa

reported one instance of ophthalmia from pediculi of the lashes. Arlt reports one instance of occurrence in his experience. Mackenzie on "Diseases of the Eye" quotes Lawrence's case, but says nothing of ever having himself seen the trouble. Stellwag refers to body lice as a very rare cause of blepharitis (which for many reasons is to be doubted) saying nothing, however, of the pubic variety. Prof. Michel goes more into a description and gives the appearance of the lashes and lid margin, differentiating between this and the other forms of blepharitis. Soelberg Wells mentions pediculosis ciliorum and says "that they might be mistaken for tinea but that the crusts are more circumscribed and are of beaded form." Landesberg contributes one case of pediculosis of the lashes and one of the eyebrows, occuring in a female child two years old. Leviste writes of a woman who was afflicted by the disease. Hansell gives the case of a two year old girl and her younger brother, whose lashes were infested with the insects and their "nits." The head of this child was also infected with its own peculiar variety. Hilgenberg wrote of a two year old boy affected with the trouble. Bader in his work "The Human Eye, etc.," gives a short description. Deval speaks of "pediculi ferox pubis" of the lashes, but his reference seems more to apply to maggots than to crab lice. Other cases (3) have been published by Rosenmeyer in which the disease had been mistaken for blepharitis and treated as such by the attending physician. Hooper reports a boy of ten years, a girl of two, and an Irish woman in whom there was also disease of the cornea, possibly as a coincidence and not as a result. Stelwagon has given another instance in a female child, and refers to Dr. Morton as having seen three cases in his practice and service at Will's Eye Hospital. In the clinic of Drs. de Schweinitz and Randall two more cases have recently been noted in female children; Dr. de Schweinitz having formerly reported one. Other instances might be spoken of, but these will suffice to show that pediculosis of the eyebrows and lashes was of exceedingly rare occurrence in the experience of writers and teachers of former times, as it seems now to be.

Those afflicted by this parasite are, as I have said, to be found chiefly among that class of society that pays least attention to its personal and surrounding cleanliness. Out of the 13 cases seen at the Presbyterian Hospital during the year 1891, 11 were of the Jewish race, and the largest number of these recently landed Poles. The remaining two were native Americans of American parentage. Nine were children under 10 years of age, 2 in their teens, 2 at 42 years and one at 52 years old. There were 7 females and 6 males. In nearly all the trouble was in the lashes of both eyes. In one case only were the brows invaded as well as the lashes.

CAUSE.—The disease is induced by direct contact only. One cause has been ascribed for the peculiarity in location, namely, that in young children there is not a favorable nidus for their development in the pubic region owing to the absence of hair and the accompanying sebaceous glands. In the lashes, on the contrary, glands are numerous and actively secreting. As this oil is their sustenance change in location becomes evident.

Pl.theirus inguinalis or pubis is a minute insect, $1^1/_2$ mm in length by 1 mm in breadth; is oval and is covered by horny segments jointed together. Sharp spines project from the body in all directions. The head is in shape somewhat like that of a tortoise. Long antennæ project from it, and on either side are prominent eyes far back near the neck. Three legs, consisting of many joints and covered in the same way as the body, arise from either side. The attachment of these with the body is very thick giving to the animal the appearance of possessing great strength. The free end of each limb is provided with a sharp curved claw, by which they grasp the lashes and lid border very firmly and facilitates burrowing down deeply into the skin. The sharp claws give rise, at times, to excessive itching. The eggs or "nits" as they are called are fastened along the hair shaft 1 millimeter or so from its base. They are pear shaped, and about $^1/_2$ mm in length. The smaller end is attached to the shaft by a clear cement sub-

stance secreted by the parasite, while the larger end is provided with a cap or lid which the young insect pushes off and so makes an exit for itself. Yellowish white or light brown is the color of the insects, and that of the "nits" much darker brown; the cap being still darker than the rest of the egg. The movements of these animals suggest very much those of a crab, and as their shape is somewhat similar the common name of crab louse may have found its origin. The eggs hatch in six days and the young are capable of reproduction in 18 days (Durkee).

CLINICAL HISTORY.—The disease is usually seen after it has progressed weeks and months. Itching and inflamed lids are the complaint of the patients, although there may be no great irritation caused, and only the peculiar appearance of crusty lashes attracts the attention of the parents. Small bead like scales are seen fastened to the margin of the lids and to the hairs. Points of ulceration and rarely blood crusts may at times be visible. The lashes present a curious appearance of thickening and nodulation from the "nits" deposited along them. Among these and also on the lower lid can be found reddish specs, the excrement of the parasites. Two, three or more insects may be found on each lid lying imbedded usually in an inspissated secretion along the lid margin.

The important feature is their recognition, the treatment being simple. To a close observer who has seen a case of phtheiriasis, the distinction between it with its peculiarities and the lumpy incrustations at the hair base which are produced in blepharitis is so marked that the diagnosis should be made at once. The nodular look of the eye lashes at some little distance from their bases is characteristic of the former. Once the diagnosis has been made the treatment is very simple and effective. The lashes may be trimmed off short and the lid border carefully touched with liquid carbolic acid, with tincture of iodine, or they may be well rubbed with a mercurial ointment. One thorough application of any of these remedies should destroy parasitic life and put an end to the trouble.

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SOCIETY PROCEEDINGS.

SECTION ON OPHTHALMOLOGY, AMERICAN MEDICAL ASSOCIATION, JUNE 7, 8, 9, AND 10, 1892, DETROIT.

CHAIRMAN, DR. J. L. THOMPSON, OF INDIANAPOLIS; SECRETARY, DR. GEO. E. DE SCHWEINITZ, OF PHILADELPHIA.

The Section on Ophthalmology convened at the Hotel Cadillar, Tuesday, June 6.

The Section was called to order at 3 P. M. by the Chairman, Dr. J. L. Thompson, of Indianapolis, who took as the title of his address,

HOW SHALL WE MAKE THE MEETINGS OF OUR SECTION MORE ATTRACTIVE AND HELPFUL?

He thought it was a mistake to have too many papers. Fewer papers should be read and more time allowed for the discussions which often enhanced the value of the papers read. He suggested the advisability of referring the matter to an executive committee to decide what papers should be read and discussed at the meeting and which should be read by title and referred to the publication committee.

THE GRADATION OF LENSES,

was the title of a paper read by Dr. Dudley S. Reynolds, of Louisville, Ky., in which he advocated the designation of lenses by their angles of refraction in degrees and minutes rather than by the inch or metric system as is the present custom.

WHAT MAY BE CONSIDERED NORMAL CORNEAL ASTIGMATISM?

By H. V. Würdemann, M.D., of Milwaukee.

The author considered the ophthalmometer an essential instrument for the specialist. It is generally held that the instrument gives nearly the total astigmatism of the eye. The author had not found this to be the case and thinks that the varying reports on the relation of the corneal to the total measurements may be accounted for by the personal equation of the operator and by this method of examination.

Instead of following the usual instructions for keratometry with the ophthalmometer of Javal and Schiötz by which an error of even 1 D. may be made, he advocates comparison of the black interspaces in approximating the plaques and reading off on the graduated scale of the arc the exact refraction of the principal meridians.

In the measurements of all sorts of corneæ in their principal and oblique meridians at 5° intervals from the visual center to the limbus, he finds all corneæ highly astigmatic in their periphery and that in most cases the curvature diminishes more rapidly in the vertical than in the horizontal meridians. He considers that five degrees on either side of the visual center serves for most purposes of vision and if this area be free from astigmatic aberration, the eye may be called non-astigmatic. The optical portion of the cornea however, embraces an area of about 170° around the pupillary center (which nearly corresponds with the optic axis). This is elliptoidal in shape, with axis approaching the vertical, being limited by the angular aperture of the pupil. This does not accord with the polar zone, which extends for 10° to 20° around the corneal axis. The latter zone is elliptoidal with long axis in direction of general astigmatic axis.

The amount and diameter of astigmatism is influenced by the relative position of the visual lines to the different parts of the polar zone. Degress of corneal astigmatism of 3. or 4. D may be produced by the visual line passing eccentrically

through the cornea, and in his opinion is one of the principal factors in its production.

From the records of 300 eyes of which 63 were emmetropic, 52 simple hyperopic, and 8 simple myopic, the rest showing total astigmatism, he finds 93% of the whole number to have corneal astigmatism appreciable by the ophthalmometer. All of the cases where the total equalled the corneal measurements, were found in the latter. All of the emmetropic, hyperopic and myopic eyes had corneal errors ranging from a little less than .25 D to 1.50 D. In adults the corneal astigmatism was usually .50 D greater than the total when the meridian of greatest refraction was vertical and the same amount less when horizontal. In old people the average difference was .25 D and in children .75 D. Most of the cases where the total equalled the corneal error were found in the elderly. This is a general statement as the amount of astigmatic aberration is modified by the kind of general ametropia and the amount of lenticular decentration. The difference is neutralized by a corresponding lenticular astigmatism *against the rule* which has its origin in the oblique position of the lenticular refracting surfaces to the visual line. The decrease in difference observed in old subjects may perhaps be explained by senile changes in the lens structure increasing its refraction. He considers that a total astigmatism is not fully corrected by cylindrical lenses on account of the irregular or meridional astigmatism which exists in all eyes within a few degrees of the visual axis. He regards that amount of corneal astigmatism as normal which is neutralized by the lenticular error. This irregularity in the corneal refraction may be considered a corrective effect on the part of nature in setting aside a certain amount of lenticular error. In the use of the ophthalmometer for glass-fitting he is generally prepared to subtract .50 D to .75 D from its readings when with the rule in children and to add the same against. In adults the difference is usually .25 to .50 D. When the meridian of greatest refraction is oblique the corneal and total error is about the same, and when at other angles a greater or less error is to be

expected according to the relative nearness of the principal meridian to the vertical or horizontal. When no central error exists, there is total astigmatism against the rule.

DR. HENRY D. NOYES, of New York, in the discussion that followed, dwelt upon the value of the Javal ophthalmometer in determining the amount of astigmatism. This instrument has shown that mixed astigmatism is more frequent than is commonly supposed. It has also shown that after the principle meridians of the cornea are not at right angles to each other. The determination of what the patient must wear, is however, a practical question and must be divided by the test case. The value of the ophthalmometer is that it determines the lines in which the experimentation must proceed. The use of the ophthalmometer has eliminated to a great extent the necessity for the use of a mydriatic. The mydriatic should be reserved for those cases in which it is required by the pain or other subjective phenomena. His plan in examining a case is first to use the ophthalmometer, then the ophthalmoscope with the glass determined by the ophthalmometer placed behind the mirror, and then he goes to the test lenses and ascertains what can be done toward bringing the acuity of vision up to normal.

DR. SAMUEL D. RISLEY, of Philadelphia, agreed with Dr. Noyes, that while the ophthalmometer was of value, the glasses to be ordered were those selected by the patient or giving the best acuity of vision, as regards the use of mydriatics; in his experience the use of a mydriatic was necessary in order to secure accuracy in estimating the error of refraction.

DR. G. C. SAVAGE, of Nashville, advocated the use of a mydriatic, saying that he was not willing to refract a case, especially in a young person without paralysis of the ciliary muscle. There is no harm in this measure.

DR. EUGENE SMITH, of Detroit, did not use a mydriatic as often as formerly. With the ophthalmometer, the retinoscope, and the ophthalmoscope, he found the necessity for mydriasis steadily diminishing.

DR. HUBBELL, of Buffalo, referred to one practical point in connection with the use of the ophthalmometer and that was

that the full amount of astigmatism as thus found should not be corrected, but a certain allowance should be made and the greater the amount of astigmatism shown, the greater should be the allowance.

METHOD OF EXAMINING THE EYES OF SCHOOL CHILDREN.

Under this title, Dr. B. Alex. Randall, (Philadelphia), touched upon the hygienic importance of such studies, the shortcomings of many of those heretofore made and the plan under which practically and scientifically valuable data would be obtained at the minimum cost of time. Distant vision and astigmatism are tested for each eye by a fixed artificial light; the muscle balance by Maddox prism, or red for a far point light, and for a near, dot-and-line or pen point; the punctum proximum of each eye for Jaeger No. 1; the refraction by the direct method, retinoscopy, and at need by test lenses; the color sense by Holmgren's worsteds; and these data together with notes of the general health any eye trouble, glasses, etc., can all be noted on a blank headed by the name, age, sex, school and class of the pupil and the date of the examination.

Recording these results himself, he was able in an examination of 356 boys in the William Pen charter school of Philadelphia, to examine about a dozen per hour and with a clinical clerk, an expert observer could easily make twenty such examinations in an hour, learning practically all ordinarily sought in the first examination of the careful specialist. Less than this generally leaves the finding to incomplete and uncertain to have value to science or to the individual, while as much more can be studied as time permits.

MANIFEST AND LATENT HYPEROPIA.

DR. EDWARD JACKSON, of Philadelphia, read a paper on this subject based on a statistical study of 214 cases, the refraction being accurately measured before and after full mydriasis. He found that the amount of hyperopia manifest depended largely on the method of testing for it, that contrary to the usual im-

pression it became more common rather than less common as the patient grew older, and that in those eyes in which there was some hyperopia latent, the proportion that was latent was about the same at different ages.

He concluded that latency of hyperopia is exceptional, inconstant, and abnormal; that it would usually be unnecessary to employ a mydriatic to render all the hyperopia manifest if we only had some method of certainty detecting the cases in which it was necessary. That a mydriatic is as frequently needed and as strong a mydriatic is needed to render manifest all the hyperopia at the age of forty-five as at fifteen.

In correcting hyperopia without a mydriatic the assumption should be that the total hyperopia is manifest. To add something to the correcting lens on the assumption that there remains a certain portion of the hyperopia latent will in the majority of cases entail imperfect distant vision which will last as long as the glasses are worn.

In prescribing the lens correcting less than the total hyperopia, in allowing for some of the hyperopia to remain latent we are allowing for an inconstant temporary condition, usually abnormal, and should warn the patient of the probable need for an early increase in the strength of the lenses; and that the best and most permanent relief result is not to be expected until such change has been made.

THE FOURTH DEGREE PRISM IN THE CORRECTION OF HYPERPHORIA.

By Dr. A. E. Prince, of Springfield, Ill.

The paper consisted of a selection of cases illustrating the importance of detecting and correcting minimum degrees of hyperphoria in cases of asthenopia, headache, neuralgia, drowsiness, dizziness, lachrymation, conjunctival hyperæmia, etc., in which no more apparent cause is found to account for the discomfort, The subject was illustrated by extracts from twelve cases selected to illustrate a variety of types of discomfort, in which the correction of so small an error has been found to counteract the symptoms.

The following matters of detail were urged to secure the greatest possible degree of precision.

First: Secure a perfect Maddox rod test which is thought to be superior to the prismatic displacement test for these delicate measurements.

1. Because the images on the retina are entirely dissimilar and have no tendency to blend.

2. From the fact that they can be superimposed thus facilitating comparison, which is especially important in the detection of small degrees of error.

3. Because comparison is more readily made between the hyperphoria and equivalent corresponding cataphoria, thus eliminating errors of observation or statement.

Avoid the effect due to the fact that these rods are drawn and a certain portion of them is slightly conical, which can be detected by inverting the rod before the normal eye. Have the rod mounted so as to rest in a frame independent of the face.

Still further to increase the efficiency of the method, at his suggestion F. A. Hardy & Co. have in process of manufacture, a phorometer, the essential portion of which consists of two 3° prisms, which rotate in opposite directions, over one another so as to present before the rod every fraction of a degree from O, where they are neutralized to six degrees when they act together.

An arc is graduated to one-eighth of a degree, so that the refraction can be accurately read off, as well as the nature of the error whether it be exophoria, esophoria, or right or left hyperphoria.

Second: Make the point of observation the smallest compatible gas jet. By doing this a narrower light streak is observed which, when the rod is in the vertical position before the eye, should in the absence of hyperphoria, exactly cut the flame.

Third: Place the gas jet or taper before a dark back ground which will increase the capacity of the patient to detect a small error. On several occasions hyperphoria has been over-

looked, and other errors which were present corrected, later to find upon more careful observation with a reduced light and dark background, that one or two quarters were present, the correction of which gave relief.

Fourth: Compare the hyperphoria with the corresponding cataphoria, to which it should be equivalent. In event of discrepency in these cases, it has been found the best practice to correct the smallest degree in the trial frames, and test again to ascertain if more becomes manifest.

Fifth: Following the suggestion of others it is believed that a much larger percentage of satisfaction can be secured by being provided with a variety of light steel frames, with bridges of various heights and prominence, supplied with long screws to facilitate changing of prisms, which should be worn for a sufficient length of time, either with or without such other corrections may be present, so ascertain whether the prism in question is acceptable to the patient.

Each case is a law upon itself, for some classes will be found in which the heterophoria is provisionally corrected with comfort to the patient, by the muscular adjustment, while in others an error of one-fourth degree will require a corresponding prism before relief can be obtained.

A word may not be amiss concerning the measurement of the weak prism, whereby the physician may be assured that his prescription has been accurately filled by the optician. There are various methods known to the mathematical optician which are impracticable in the practice of the physician, who must more than likely, rely on the method of neutralization. To this end, as well as in the original detection of the error, I have found the Maddox rod to serve best. Knowing the prismatic error possessed by ones' self, and having corrected it, the rod causes the ray of light to appear to cut the flame seen by the fellow eye. The glass in question is now held before the eyes, when an appreciable vertical displacement will occur. The neutralizing glass is now placed before the glass to be tested when the equilibrium will be restored. This method is simple and can be operated by any one having

good binocular vision, and an approximation to orthophoria.

FACIAL EXPRESSIONS AS INFLUENCED BY THE OCULAR MUSCLES.

By George T. Stevens, M.D., New York.

In the course of some years of close observation of the anomalies of the muscles which govern the movements of the eyes, the fact that remarkable changes often follow the modification of these muscles led the author not only to regard with greater care these facial changes, but to bring to the subject the aid of photography. Photagraphic portraits of more than two thousand person have been taken, the records of whose ocular muscle conditions have been carefully and repeatedly made.

We have thus for the first time a series of observations in which the facial expressions are registered by photography, while painstaking determinations of the ocular muscle conditions are faithfully recorded. The result of the study has been to demonstrate that certain well defined types of facial expression are not only associated with but are dependent upon certain relative tensions of the oculo-motor muscles. With the state of equilibrium of the eye muscles, orthophoria, the expression is one of greater repose than with any of the states of heterophoria. The eyebrows form each a moderate and regular curve marking the border of the orbit, the lower border of the brow corresponding to the orbital border. The inner extremity descends toward the nose, but does not turn downward into the depression bounded by the nose and orbit. There is no sharp turn or curve at either extremity. The mouth is nearly horrizontal, or carving very slightly upwards at the center. The lips, in repose, are firm, but not compressed and the upper one is well proportioned. The chin is rounded, neither square nor pointedly oval. The lines of the forehead are not especially conspicuous. The facial lines are moderately spreading. With esophoria, the brows are compressed, the extremities often curve suddenly downward, the inner extremity sinking into the depression bounded by the nose and

orbital border. The palpebral fissure is usually less widely open than in orthophoria or exophoria. The lips are firm, the upper one short. The posterior portions of the alae of the nose are drawn slightly upward. The superficial lines or grooves upward from the nose are erect and distinct especially in middle life and later; transverse lines upon the forehead, low; the naso-labial and cantho-malar grooves spreading. The lower part of the face is broad.

With exophoria the brows are usually raised, often strongly arched; palpebral fissure often wide, upper lid rather conspicuous; upper lip long; corners of the mouth often drawn up, and the mouth curving down at center; lower part of the face usually narrow; principle grooves of the face more vertical than with esophoria. The transverse lines upon the forehead are mostly above the center.

Hyperphoria is characterized by irregular features. On the side the visual line of which tends to rise above the other, the brow is depressed, while on the other side, the brow is elevated. Thus the brow and neighboring tissues of one side aid in depressing the front of the eye, while on the other hand, by the elevation of the opposite brow, less demand is made upon the muscle which rotates that eye upward. These contrary actions demanded by the relations of the visual lines in hyperphoria affect the whole face, resulting in a want of harmony of the two sides. The angle of the mouth or the side on which the brow is depressed is drawn upward. Thus one side of the face appears longer than the other.

There are a number of sub-types, depending upon hyperesophoria and hyperexophoria.

While there were apparent exceptions to these rules—as to most rules—and while the bony structure must give to the face its general form, the law is very generally prevalent.

The recognition of these types of expression is useful to the oculist as well as to the artist, any one of the types may be modified or transformed to another type by modifications of the relative tensions of the muscles which rotate the eyes.

[TO BE CONTINUED].

SELECTIONS.

SOME CASES OF OBSTRUCTIVE DISEASE OF THE LACHRYMAL PASSAGES AND THE ASSOCIATED INTRANASAL LESIONS.[1]

BY G. E. DE SCHWEINITZ, M.D.,

Professor of Ophthalmology in the Philadelphia Polyclinic; Lecturer on Medical Ophthalmoscopy, University of Pennsylvania; Ophthalmic Surgeon to the Philadelphia Hospital, etc.

The intimate relationship between diseases of the lachrymal apparatus, that is, of the drainage system of the eye, and various types of the inflammatory changes in the nasal mucous membrane, is an old story. Indeed, the close association of ocular and naso-pharyngeal disease is not limited to these conditions. The great majority of phlyctenular ophthalmias depend upon some type of rhinitis, and are often the direct outcome of adenoid growths in the pharynx. Many obscure symptoms, which we are wont to describe under the general term "asthenopia," have been known to depend upon intranasal disease, and a variety of orbital, ocular and post-ocular pains are frequently "referred pains," that is, their origin is from some lesion within the nasal cavity, the frontal sinus, ethmoid cells, or antrum of Highmore. In fact, as Harrison Allen has remarked, a good deal of the success of treatment depends upon a proper attention "to the commonality of the various parts of the cephalic mucous membrane."

[1]Read before the the Philadelphia Medical Society, April 1892.

The following cases are reported, not because they illustrate new points, but because they emphasize some old ones, and still more because they emphasize that the cure of obstructive lachrymal disease is materially facilitated, not merely by the ordinary measures adopted for rendering the passages patent, in association with what may be called routine intranasal treatment (for I take it no one attempts to treat lachrymal disease without due attention to the nasal mucous membrane), but that more radical measures are frequently of value when applicd to the nasal chambers and the vault of the pharynx, which in the majority of cases are the regions primarily affected.

CASE I.—*Purulent Dacryocystitis; Traces of Rhinitis and Abnormal Shape of the Lower Turbinated Bone.*—D. D., a boy, aged 6, reported for treatment, November 3, 1890. Three years ago pus began to exude from the right punctum lachrymale, and in spite of treatment this condition has continued ever since. The boy was healthy in other respects; he had never suffered from measles or scarlet fever; was free from evidences of inherited syphilis, and had sustained no injury. His voice was slightly nasal in tone.

The lower canaliculus was slit, and a firm stricture at the beginning of the nasal duct was evident. The probe was not forced, neither was the stricture incised.

The patient was referred to Dr. Alexander MacCoy, for nasal examination, who reported as follows: "The right nostril shows an abnormal shape of the lower turbinated bone, also some evidence of a severe rhinitis during the past. I believe that the position and form of the lower turbinated body have had much to do with the disease of the duct on account of the obstruction to its entrance at its lower portion into the nasal chamber. The boy also has a pharyngeal tonsil which obstructs the posterior nares somewhat." Dr. MacCoy undertook the treatment of the nasal condition. and after a few days the stricture was incised, the probe passed, and the usual treatment instituded. When the intranasal obstruction was removed, the epiphora ceased and has never reappeared.

I have referred to this case in a paper on the use of pyoktanin in dycryocystitis,[1] and may repeat that my colleague, Dr. Gould, as well as myself, has obtained satisfactory results with this drug in the treatment of unhealthy lachrymal secretions.

The case is now utilized, however, to illustrate what seems to me a very important point to which Dr. MacCoy calls attention in his report, namely, that although the stricture of the duct, which in this case existed high up, was penetrated, and although the fluids and the probe passed readily, the epiphora continued because of the malposition of the turbinated bone. Indeed, this obstruction sometimes exists only in the form of a small flap of mucous membrane, which closes the entrance of the duct into the inferior meatus, very much as a valve would do. This effectually prevents the drainage of the eye, and unless it is removed, good results will not follow. In this particular instance it was very easy to see the obstruction by first passing a probe and then exposing the entrance of the duct into the meatus by means of a nasal speculum—a slight precaution which will often lead to the discovery of a cause of a persistent overflow of tears in spite of the apparent permeability of the passages.

CASE II.—*Catarrhal Dacrocystitis; Bands of Adhesion from the Inferior Turbinated Body to the Septum.*—Ella H. aged 28, reported for treatment at the Philadelphia Polyclinic, October 24, 1891, on account of an inflammation of the right eye, which had existed for several days. There was a small abscess at the inner margin of the lower lid, with a fistulous communication into the lachrymal sac. A free muco-purulent secretion distended the sac in the form of an ordinary mucocele. The canaliculus had been slit at some previous time, but a probe did not pass readily.

She was referred to the throat department, and examined by Drs. Authur Wilson and Walter Freeman, who reported as follows: "Atrophy of both inferior turbinates; unable to ob-

[1]University Medical Magazine, vol. 3, p. 181.

tain a posterior view; former ulceration of the posterior wall of the pharynx; bands of adhesion from the inferior turbinates to the septum; also one from the middle turbinate to the septum on the right side."

Even in the absence of definite history, the pharyngeal condition seem to indicate syphilis. The patient was ordered an astringent lotion, given potassium iodide and bichloride of mercury, and referred to the throat department for treatment. In January of this year an operation was made upon the lower turbinated bone, and the condition has improved without passage of probes, the secretion and the epiphora have materially lessened.

This case illustrates the ordinary intranasal lesions, which were evidently at the bottom of lachrymal trouble, and is further interesting, because these lesions gave confirmatory evience of the syphilitic condition, so much so that improvement was facilitated by the proper constitutional remedies.

CASE III.—*Lachrymal Abscess; Spur on the Septum opposite the Middle Turbinated Bone; Chronic Pharyngitis.*—Sarah S., aged 45, reported for treatment at the Philadelphia Polyclinic, November 24, 1891. In April, 1891, epiphora began in the left eye, for which she seems to have undergone no treatment. It continued until about one week ago, when suppuration of the lachrymal sac took place. When she presented herself there was a very marked lachrymal abscess. The pus was evacuated by an external incision, the sac freely irrigated with an antiseptic fluid, and the patient referred to Drs. Watson and Freeman for examination.

They reported as follows: "On the left side there was a spur on the septum, opposite the middle turbinated bone; also hypertrophy of the tissues. The turbinates are small. There is chronic pharyngitis, a thick phlegm covering the tissues."

Unfortunately this patient has failed to report with any regularity, and the ultimate result cannot be given. The case illustrates the history of so many of these cases, namely, a chronic pharyngitis and hypertrophy and inflammation of the intranasal mucous membrane, involvement of the lachrymo-

nasal duct, and epiphora owing to an obstruction primarily from swelling of the mucous membrane, and later from the formation of a positive stricture. Under the influence of the pressure and of the stricture, the fluids of the conjunctival sac are not drained, but distending the lachrymal sac, become infective, an abscess forms, and the condition which has been described results.

CASE IV.—*Epiphora; Atrophic Catarrh.*—Jane C., aged 60, reported for treatment at the Philadelphia Polyclinic, November 14, 1891, complaining of pain in her eyes, constant epiphora and inability to read on this account. There were considerable hypermetropia and some astigmatism and, as epiphora is frequently caused by the strain of uncorrected ametropia, proper glasses were ordered, but the overflow of tears continued. Both canaliculi were then slit. There was narrowing of the ducts, but no stricture, and probe and fluids passed readily. The epiphora improved, but did not disappear.

She was referred to the throat department, and the following report was made: "There was an atrophic condition on both sides, and a spur on the septum on the right side, near the opening of the lachrymal duct, but it does not interfere. The closure is probably due to contraction from atrophic changes.

This is a very good example of a very common condition, most frequent in elderly people, where there is neither disease of the sac, stricture of the duct, nor pressure from a spur or hypertrophy of the turbinated bodies, but where the obstruction depends upon contraction from atrophic changes.

CASE V.—*Phlegmonous Dacrocystitis; Deflection of the Septum; Spur on the Left side Pressing on Inferior Turbinated Bone.*—Matthew L., aged 27, presented himself for treatment on account of an extensive lachrymal abscess, with a small opening and widespread infiltration of the tissues, producing a large swelling, involving the lower lid and cheek. The abscess was incised, and the pus cavity freely washed out and an antiseptic dressing applied. In a day or two the swelling had

subsided, and nothing remained but a slight brawniness of the tissues and a fistulous opening at the point of incision. The canaliculus was slit, but all efforts to introduce the probe proved futile. The patient had been much exposed to weather; had a history of an old injury; but denied syphilis. The obstruction to the tear passage had existed since early fall.

He was referred to the throat department, and the following report was received. "The septum is irregularly deviated in front; there is a spur on the left side pressing on the inferior turbinated body, which also contains an ulcer in its anterior portion."

He was warned that "catching cold," which would increase the nasal obstruction, would certainly bring about a relapse of the abscess. He went to work, however, and returned a few days afterwards with all the conditions previously described in a very much aggravated state. The same treatment was instituted, and he was again referred to the throat department, and on February 23, the hypertrophy on the left side was removed. On the same day a probe was passed, and since this time its passage has been repeated. Epiphora still continues, but is decreasing day by day.

This case illustrates the mechanism of relapse in many of the tear-passage cases, in this instance producing a very serious phlegmonous inflammation. Under treatment and rest sufficient drainage takes place to produce amelioration of the symptoms; swelling from congestion, owing to exposure, is added to the organic obstruction already present, producing complete closure with an exacerbation such as has been detailed.

CASE VI.—*Stricture of the Nasal Duct; Moderate Hypertrophy of the Inferior Turbinated on the Left Side and a Spur on the Right Side.*—Rridget R., aged 50, applied for treatment to the throat department of the Philadelphia Polyclinic, and the following lesions were found: "A moderate amount of hypertrophy of the left inferior turbinated near the nasal duct, and a spur on the septum of the right side, close to the opening of the duct. With these lesions there was epiphora, most

marked in O. D., and slight lachrymal conjunctivitis. She had not been able for a number of months to use her eyes with any confort. She was referred by Drs. Watson and Freeman to the eye department. The canaliculi were slit, and a stricture was found at the mouth of each sac. A No. 2 Bowman's probe was passed without difficulty.

It is evident that although there were lesions in the nasal passages, they were not obstructing the duct; but under the influence of the chronic nasal inflammation a stricture had formed in the lachrymal canal.

CASE VII.—*Epiphora from Swelling of the Mucous Membrane of the Lachrymo-nasal Duct. Atrophic Rhinitis.*—A. K., an unmarried woman, aged 26, was referred to me by Dr. Ralph W. Seiss, on account of epiphora of the right eye, which had persisted for some time, in spite of nasal treatment. There was no swelling of the lachrymal sac, no catarrhal or purulent secretion, but simply an overflow of tears. The general health was good, the eyes not far from emmetropic, and there was neither asthenopia nor headache.

Dr. Seiss has kindly furnished the following report of the nasal lesion: "Atrophic rhinitis, presenting the ordinary appearance of tissue destruction, combined with some odor and much secondary laryngo-bronchitis."

The canaliculus was slit, and a No. 3 Bowman's probe was passed without meeting a stricture, but with a resistance to its passage which is characteristic of obstruction from swelling of the mucous membrane. After the passage of this probe the duct was irrigated on several successive days with a solution of boracic acid and common salt, without, however, passing the canula into the duct. The fluid trickled readily through the nose. The epiphora stopped after a few treatments, and has never returned, although many months have gone by since she originally reported.

This patient represents a common class of cases of epiphora associated with chronic inflammation of the naso-pharynx. An inflammation occurs in the nasal duct, but does not produce a true stricture; the occlusion is from swelling, not

from cicatricial changes. In many cases it is sufficient to do waht was performed in this case; in others even milder measures suffice. Above all things, this is an example of a class of cases, the successful treatment of which I have learned, especially from Dr. Risley, by obeying the principle which he was wont to instill, not to be too ready to pass probes and canulas, lest their introduction scrape away some of the mucous membrane and really do more harm than good. It is unnecessary to do more than medicate the swollen mucous membrane with any solution that is suitable. I prefer boracic acid and common salt.

Many more cases might be quoted; but these seven, representative of various classes, are sufficient to illustrate the points which I desire to make.

(1) A large class of cases exists, characterized chiefly by epiphora, without catarrhal or purulent secretion, in which obstruction in the lachrymo-nasal duct depends upon swelling of its mucous membrane, and not upon true stricture. The primary origin of these cases, in the great majority of instances, is a chronic or subacute post-nasal catarrh. The evident indication is the treatment of the latter condition and the medication of the swollen mucous membrane of the lachrymo-nasal duct, so that it may regain, as nearly as possible, its natural condition, which it will do without much instrumental interference—an interference that may of itself, if unskilfully performed, be the cause of a cicatrizing band that never originally existed. Case VII of the series illustrates this class of cases.

(2) The life-history, if I may so express myself, of many cases of obstructive disease of the lachrymo-nasal duct and the formation of a lachrymal abscess, is illustrated by cases III and VI. First, a chronic pharyngitis occurs; later, hypertrophy and infiammation of the intranasal mucous membrane, followed by swelling of the lining tissue of the lachrymal duct. Gradually cicatricial changes arise, and a true stricture is formed. The drainage of the conjunctival cul-de-sac ceases; the micrococci natural to the part, and those which readily

find access to this region, permeate the contents of the lachyrmal sac, because this can no longer be emptied; the pathogenic micro-organisms exercise their true function, and suppuration occurs.

(3) A number of cases develop, chiefly in old people, in which there is epiphora, again without the presence of pus or muco-pus, depending upon obstruction in the lachrymal duct from atrophic changes, the whole being part of a similar atrophic process in the intranasal passages, and generally described under the term "atrophic catarrh." The obstruction in these instances is not from swelling, not from stricture, but from contraction. Case IV of the series is an example in point.

(4) A very common cause of exacerbation of lachrymal disease is due to the pressure of a hypertrophic turbinated body, or similar intranasal obstruction. which under treatment has gradually subsided, but which, owing to exposure, swells up again and exercises its obstructing influence. At once there is occlusion of the lachrymal passages with recrudescence of the symptoms. The very serious nature of such cases is illustrated in Case V of the series.

(5) In every case of lachrymal disease the physician should be mindful of constitutional causes, and the value of confirmatory evidence by pharyngeal and intranasal examinations is illustrated in Case II, an example of constitutional syphilis. Local treatment may be necessary; local treatment without general medication is ineffectual.

(6) Finally, I come to the class of cases in which there exists an obstruction at the intranasal end of the duct (it may be trivial), permeable by the fluids used in a syringe, but an impassable barrier to the outflow of tears. Even the slightest obstructions, under these circumstances, may defeat the most classical treatment of lachrymal disease. The ready detection of such a lesion is illustrated in Case I of the series.

It has not been my intention at present to refer to what are the best means of treating lachrymal disease, except in so far as these are implied by the descriptions of the lesions which existed in the examples I have reported. Whether we believe

that small or large probes should be passed, whether we class ourselves with those who believe that the probes should not be used at all, whether we are the advocates of this or that antiseptic and astringent fluid, whether we think that strictures should be incised or should not be incised, whether we believe in the permanent wearing of styles or canulas, it is evident that the rational treatment of certain types of obstructive lachrymo nasal disease must also include, not only the ordinary intranasal treatment with sprays and powders, but a systematic and thorough examination of the naso-pharynx. and, if necessary, the best operative interference known to intranasal surgery. (*Univ. Med. Mag.*)

A SIMPLE METHOD OF TREATING MANY CASES OF LACHRYMAL OBSTRUCTION.

BY GEORGE M. GOULD, A.M., M.D.,

Ophthalmologist to the Philadelphia Hospital.

I always suspect that system of therapeutics, whether political, social, or medical, to be wrong that proceeds on the assumption that its author could have given God some very good advice had the reformer been present at the creation of the world. In social science it is well recognized that any method of enduring progress must be based on helping Nature instead of disregarding or opposing her. In medicine and surgery the history of all failures is that "the fools rush in" with their little wisdom, supposed superior to the great wisdom of Nature, and, without study of the subtle ways and indications of the physiological processes, ruthlessly disturb or overturn the delicate measurss of cure silently at work.

There seems to me a little illustration of this great truth in one small department of ophthalmic surgery—that relating to the condition of the lachrymal excretory apparatus giving evidence of itself by lachrymal retention,or even epiphora, lachrymal

conjunctivitis, dacryocystitis, etc. There are, of course, a few cases in which the patency of the system is interrupted by closure of the intranasal orifice of the duct, the result of rhinitis, chronic or acute, malformation of the adjacent parts, indiscriminate use of the cautery, of the lachrymal probe, etc. There are others in which a genuine anatomical stricture may exist, the result of inflammation, morbid growth, traumatism with probes, etc. Without attempting an enumeration of such cases of lachrymal stenosis or occlusion, and admitting them out of this count, I wish to urge that the vast majority of cases with symptoms of retention of tears are due to temporary and functional causes. There is a large number due to excess of secretion (instead of defective excretion) arising from eye-strain (overuse of a physiologically normal or an ametropically abnormal eye), from local irritations or congestions of many kinds, etc. There is another and still larger class of cases in which the abnormal conditions of the nares or nasopharynx by contiguity of tissue, or by duct-transfer of morbific material, living or chemical, to the upper part of the duct or sac, there set up congestion of the lining mucous membrane, and hence stenosis and retained secretions. It needs only the very slightest swelling of the membrane to narrow overmuch or to entirely close the patency of the tiny lumen of the canaliculus or duct.

Dr. S. D. Risley tells me that in examination of a number of dry skulls he found in none lachrymal ducts which admitted of the passage of the larger probes advised for "probing" the living, membrane-lined, and therefore narrowed, canal. The careful and excellent observer has long taught that the function of the duct is not that of a large drain, which it is not, but of a tiny capillary tube, which it is. The frequency of unhealthy nares, the abundance of dust and other pathogenic material, living or neutral, in our modern city life, that is sucked through the nares with every breath, or deposited in the conjunctiva between every wink of the eyes, furnish evident reasons for the overstimulation of the lachrymal or secretory apparatus, or for the functional interference of all grades with

the act of excretion. A little narrowing, the irritation of a little retained morbid material, the extension up from the nose or down from the conjunctiva of a frequently-present local congestion or inflammation—and we have the eye bathed in tears, lachrymal conjunctivitis, or dacryocystitis.

Under such circumstances, what anatomic ignorance, what physiological stupidity, what therapeutic sin, to "slit up the canaliculus"—that wonderful little structure, with its sphincters about the puncta, and fashioned so patiently by Nature for a purpose and use—forever destroying its function, and, by brute force, jamming a rod of metal down among the congested membrane, wounding it in every part of its length by crushing it between the rigid probe and the bone, against which it lies in such close union! And yet this is the routine practice advised and carried out almost everywhere.

No wonder such cases are "obstinate." The cure creates the disease, and even worse; where before was only functional stenosis, there is doubtless often, by traumatism, organic stricture following inflammation set up by the probe injury.

Let us go at Nature less mechanically and brutally. Is there not a better way?

About a year ago I found blue pyoctanin (1 to 1,000) an excellent means of overcoming lachrymal conjunctivitis and disorders of the sac and duct, and I believe my colleague, Dr. De Schweinitz, substantially agrees with me in conclusions from the experience. The effect is doubtless due to the powerful penetrating quality of the methyl violet, coupled with some antiseptic property. But it is almost impossible to use this drug without its highly objectionable staining qualities becoming obtrusively manifest. I have therefore discontinued its use and have adopted another plan that seems to me based upon natural methods and to be an extension of Nature's indications.

Little children, in whom the fount of tears easily overflows, and in whom the excretory function is therefore put to most active use, are constantly "gouging" the "corners of their eyes," the inner canthi, with their little fists in a way that sometimes

appears almost dangerous. Here, then, is the latest discovery in therapeutics—massage made use of by infantile wisdom. Even therapeutically, "babes and sucklings" may teach us if we are modest enough to learn.

In dacryocystic troubles every ophthalmic surgeon empties the sac by slow pressure upward and inward toward the inner canthus. How frequently in doing this we force a gush, seemingly absurdly great in quantity, of watery, mucoid, or purulent material, through the puncta—especially the upper one! But not following up the hint given by the babies, or by this latter procedure, the surgeon stops here and reaches for the knife and probes.

It would seem that the suggestion of massage, of continued and repeated emptying of the clogged sac by pressure, were worth trying. Perhaps massage alone would cure many cases. If now, without injury to the parts, we could refill these empty but congested canals with an antiseptic and astringent fluid, would we not at once and certainly cleanse, heal, and bring all back to physiological order? This is very easy.

First empty the sac and canaliculi by dexterous pressure, and cleanse the eye and palpebral pockets of this unhealthy material. Then cant the patient's head back and to one side, or have him lie so that a teaspoonful of liquid will be held in the depression formed by the nose, orbital border, and superior maxilla. Fill this space with a solution of boric acid,[1] and with the little finger again slowly empty the sac and canaliculi by pressure, and then, as slowly lessening the pressure, allow these spaces to refill, by suction and capillary attraction, with the solution under which the puncta are submerged. Again, in half a minute empty the canaliculi and sac by pressure, but this time beginning the pressure from the canthus toward the nose and downward, so as to force the antiseptic solution downward, so as to force the antiseptic solution downward into the duct. These alternate emptyings and refillings of the

[1]The solution I use is composed, to the ounce of distilled water, of boric acid, ten grains; common salt, three grains; chloride of zinc, one grain—all deeply tinted with pyoctanin-blue, and doubly filtered after long standing.

sac may be repeated several times and as often as desirable to meet the indications of the case. It will usually be found that the sac will soon become healthy and that pressure upon it will not cause regurgitation of morbid material through the puncta.

This treatment may not be "surgical," but it is "common sense."

A certain number of cases, however, will not yield to this treatment. There is too great a stenosis or spasmodic contraction of the muscular sphincter of the punctum, etc., so that the cleansing solution can not be forced into the sac and duct. In such cases I am accustomed to insert one sharp point of the iris scissors into the punctum and snip it open about one-eighth of an inch, perpendicularly downward toward the conjunctival fold. This gives a larger opening for the indrawal of the solution.

I have been astonished to see how rapidly cases recover under this simple treatment that formerly would have seemed to demand slitting of the canaliculus and probing. I have been led to wonder if under the old treatment the good was not really done by the antiseptic or cleansing solutions commonly used with the surgical treatment—and, indeed, if the collyrium did not effect the cure in spite of the probing. I am thoroughly convinced that the very free use of antiseptic eye lotions, by the constant passage of the same through the duct, act therapeutically on nasal inflammations, that are themselves the primary causes or sources of conjunctival affections. Of caurse, a more effective treatment would be that of the nares direct.

One of the chief advantages of this simple procedure I would urge as consisting in the ability of the patient or of the patient's friends to carry on the treatment at home after a brief explanation and illustration by the physician. I am aware that some would consider this a disadvantage. Another and more important point in its favor is that general and family physicians can carry it out with the greatest ease. These, generally speaking, have not the necessary skill, or the special instru-

ments for probing, etc., or they shrink from "interfering with the eye;" hence many patients, failing to seek the specialist's services, remain untreated and go on from bad to worse. A large proportion of such cases would find speedy relief by an application of the foregoing method.[2]—*N. Y. Med. Jour.*

[2]Being able to subscribe to all the points made in this paper from my own experience, it is reproduced with recommendation. Alt.

OPERATION ON MICROPHTHALMIC EYES.

H. Lindo (*The Ophthalmic Review*, February, 1892), in an interesting paper on microphthalmic eyes, describes some results which he has had in improving the vision under such circumstances.

In one case, a woman aged 42, the vision of the left eye had been lost on account of glaucoma, in spite of successful iridectomy. The vision of the right eye was fingers at four meters, and she was wearing a convex lens of 5 D, with which she could decipher words of J. 8 at about three inches from the eye. The tension was normal. The optic disk seemed to be natural, but intensely red. The refraction is stated to have been +27 D, and with this lens she count fingers at 6 metres, but was not able to bear a lens stronger than +14 D, because of the intense dazzling. About two years later this glass was strengthened to 18 D. The patient was quite comfortable with this She could see $^{6}/_{LX}$ and read words at J. 1 at three and one-half inches. The reporter hopes that he may be able to give a still more ample correction later on, and lessen the danger to strain of accommodation and the production of glaucoma. The corneal measurements were as follows: The horizontal measurement was 10 millimetres in each eye, while the vertical axis of the cornea was about 5 millimetre less.

The second case was a child in whom shortly after its birth it was noticed that the eyes were small and defective. When two years old it was found that the irides were firmly bound

by adhesions to opaque lenses. Atropine treatment failed. When Furgeson saw the case, in November, 1885, the pupils were only pin-hole and the margins of the iris attached firmly to the opaque lenses. Sight equalled the power to follow the flame of a candle. In January of the following year, as nystagmus had considerably increased, an iridectomy inward was attempted on the left eye, but succeeded only in tearing away a small portion of the iris tissue. An anterior synechia formed at the sight of the incision. Two weeks later an irdectomy was made outward and the synechia was cut. He also did an iridectomy on the right eye up to the cornea. The left eye healed with an anterior synechia at the site of the incision, but in the right eye a clean iridectomy was obtained. Nystagmus was considerably lessened by the operation. In January, 1891, with the right eye, the patient counted fingers at .6 metre; with the left eye, fingers at .75 metre. The cataract of the right eye was then needled. There was no reaction, the opacity was chiefly capsular, and by the 5th of the following month, fingers could be conted at 1.75 metres. On February 9, the remains of the capsule were removed through a small corneal incision. On the 26th, vision equaled fingers at 3 metres, improved by the use of a 10 D lens. The optic nerve was now visible, and was much atrophied. On March 3, the capsule of the left eye was cut with De Wecker's scissors, and by March 20, with +13 D, vision equalled fingers at 2.25 metres. The nystagmus has now ceased and the horizontal diameter of the cornea was just a shade under 9 millimetres. It was extremely difficult in this case to test the vision; but three months later, while the child was wearing the convex 13, the father reported that a great improvement had taken place in her sight, that she was able to discern objects that had never been noted before.

Mr. Ferguson reports these cases in the hope that they may bring out experience of other ophthalmic surgeons. He refers to two interesting points—the occurrence of glaucoma in an eye with a 10-millimetre cornea, and the fact that defective development of an eye does not prevent its being successfully operated upon if the necessity arises.—*Ther. Gazette.*